

1 CLAIMS

2

3 1. A surgical implant for supporting the urethra,
4 the implant including at least two fixing zones
5 and a supporting zone, the supporting zone
6 being interposed between the fixing zones and
7 the fixing zones each having at least one
8 retaining means for anchoring the fixing zones
9 in the tissues of the retropubic space without
10 penetrating the rectus sheath such that in use
11 the supporting zone passes under the urethra.

12

13 2. A surgical implant for supporting the urethra
14 comprising an anchor strip the anchor strip
15 comprising at least one fixing zone having at
16 least one retaining means wherein in use a
17 first portion of the anchor strip is retained
18 in the tissues of the retropubic space above
19 the endopelvic fascia and a second portion of
20 the anchor strip extends into the urethral
21 pressure compartment below the endopelvic
22 fascia and thereby supports but does not pass
23 under the urethra.

24

25 3. A surgical implant as claimed in claim 1
26 wherein the supporting zone is comprised of
27 mesh.

28

29 4. A surgical implant as claimed in any preceding
30 claim wherein the retaining means are moveable
31 from an inserting position to a retaining
32 position.

- 1
- 2 5. A surgical implant as claimed in claim 4
- 3 wherein the retaining means is at least one
- 4 projection which can project from the implant
- 5 into the tissues of the retropubic space in at
- 6 least one plane the projection being moveable
- 7 from a collapsed position to an extended
- 8 position.
- 9
- 10 6. A surgical implant as claimed in any preceding
- 11 claim wherein the retaining means is glue.
- 12
- 13 7. A surgical implant as claimed in claim 6
- 14 wherein the glue is cyanoacrylate glue.
- 15
- 16 8. A surgical implant as claimed in any preceding
- 17 claim wherein the fixing zone has a pointed end
- 18 at a first end, a base portion at a second end,
- 19 wherein longitudinal edges extend between the
- 20 pointed end and the base and the longitudinal
- 21 edges are notched to provide a row of
- 22 projections extending outward from the
- 23 longitudinal edges.
- 24
- 25 9. A surgical implant as claimed in any preceding
- 26 claim wherein the implant is comprised of
- 27 plastics material.
- 28
- 29 10. A surgical implant as claimed in any preceding
- 30 claim wherein the implant is comprised of
- 31 absorbable material.
- 32

- 1 11. A surgical implant as claimed in claims 1 or 3
2 to 10 wherein the material of the supporting
3 zone is more quickly absorbed by the body than
4 the material of the fixing zones.
5
- 6 12. A surgical implant as claimed in any preceding
7 claim wherein the implant further comprises at
8 least one resilient zone wherein the resilient
9 zone provides for resilient extension of the
10 implant along its longitudinal axis.
11
- 12 13. A surgical implant as claimed in claim 12
13 wherein the resilient zone is interposed
14 between the fixing zone and the supporting
15 zone.
16
- 17 14. A surgical implant as claimed in any preceding
18 claim wherein the unextended length of the
19 implant is 6 to 22 cm.
20
- 21 15. A surgical implant as claimed in any of claims
22 2, 4 to 10 or 12 wherein the unextended length
23 of the implant is between 4 to 8 cm.
24
- 25 16. A surgical implant as claimed in any preceding
26 claim wherein the implant is of width 0.3 cm to
27 1.7 cm.
28
- 29 17. A surgical implant as claimed in any preceding
30 claim wherein the implant is of thickness 100
31 μm to 600 μm .
32

1 18. A surgical implant as claimed in any preceding
2 claim wherein at least one of the fixing zones
3 comprises pores which extend through the fixing
4 zone material.

5

6 19. A surgical implant as claimed in any preceding
7 claim wherein at least one of the fixing zones
8 comprises pits that indent at least one surface
9 of the fixing zone, but do not extend through
10 the fixing zone.

11

12 20. A surgical implant as claimed in any preceding
13 claim wherein at least one of the fixing zones
14 comprise slits that extend through the fixing
15 zone material.

16

17 21. A surgical implant as claimed in any preceding
18 claim wherein at least one microgroove is
19 provided on at least one fixing zone.

20

21 22. A surgical implant as claimed in claim 21
22 wherein a microgroove is between 0.5 μm to 7 μm
23 in width and 0.25 μm to 7 μm in depth.

24

25 23. A surgical implant as claimed in any one of
26 claims 1, 3 to 22 wherein the supporting zone
27 comprises a marker to aid the suitable location
28 of the supporting zone under the urethra.

29

30 24. A surgical implant as claimed in any preceding
31 claim wherein each fixing zone comprises at

- 1 least one aperture adapted to receive a tool
2 for insertion of the implant into the body.
3
- 4 25. Use of an implant as claimed in any preceding
5 claim to support the urethra.
6
- 7 26. Use of an implant as claimed in any preceding
8 claim for treating urinary incontinence or
9 uterovaginal prolapse.
10
- 11 27. A tool for inserting the implant as claimed in
12 any preceding claim the tool comprising an
13 elongate shaft including a semi-blunt point at
14 a first end and holding means to releasably
15 mount the surgical implant on the shaft.
16
- 17 28. A tool as claimed in claim 27 wherein the
18 holding means comprises a recess extending from
19 the semi-blunt point of the elongate shaft the
20 recess capable of receiving a portion of the
21 surgical implant.
22
- 23 29. A tool as claimed in claim 28 wherein the
24 recess is angled to twist a surgical implant
25 received by the recess along its longitudinal
26 length such that the longitudinal edges of the
27 fixing zone of the implant are directed away
28 from the bladder.
29
- 30 30. A tool as claimed in claims 28 and 29 wherein
31 the recess is offset such that a first portion
32 forming a wall of the recess is longer than a ...

1 second portion forming an opposite wall of the
2 recess.

3
4 31. A tool as claimed in claim 27 wherein the
5 holding means comprises an abutment located
6 toward the first end of the elongate shaft
7 wherein the semi-blunt point of the elongate
8 shaft is capable of being passed through the
9 surgical implant and the abutment is capable of
10 hindering movement of the surgical implant down
11 the length of the shaft toward the second end
12 of the elongate shaft.

13
14 32. A method of supporting the urethra comprising
15 the steps of;
16
17 introducing a surgical implant as claimed in
18 any of claims 1, 3 to 24 into at least one
19 incision made on the upper wall of the vagina;
20
21 inserting a first end of the surgical implant
22 behind the first side of the urethra;
23
24 locating a first fixing zone into the tissues
25 of the retropubic space fascia without
26 penetrating the rectus sheath;
27
28 inserting a second end of the surgical implant
29 behind a second side of the urethra; and
30
31 locating a second fixing zone into the tissues
32 of the retropubic space above without.

1 penetrating the rectus sheath, such that the
2 supporting zone passes under the urethra.
3
4 33. A method of transmitting intra-abdominal
5 pressure to the urethra comprising the steps of
6
7 introducing an anchor strip into at least one
8 incision made on the upper wall of the vagina;
9
10 inserting a first portion of the anchor strip
11 behind the first side of the urethra;
12
13 locating a first portion including a fixing
14 zone into the tissues of the retropubic space
15 above the endopelvic fascia without penetrating
16 the rectus sheath;
17
18 locating a second portion of the anchor strip
19 alongside the urethra in the suburethral
20 pressure compartment below the endopelvic
21 fascia;
22
23 inserting a second anchor strip behind a second
24 side of the urethra;
25
26 locating a first portion including a fixing
27 zone of the second anchor strip into the
28 tissues of the retropubic space above the
29 endopelvic fascia without penetrating the
30 rectus sheath; and
31

- 1 locating a second portion of the second anchor
2 strip alongside the urethra in the suburethral
3 pressure compartment below the endopelvic
4 fascia.
5
- 6 34. A method as claimed in any of claims 32 or 33
7 which further comprises the step of moving the
8 retaining means from an inserting position to a
9 retaining position.
10
- 11 35. Use of a method as claimed in any of claims 32
12 to 34 in treating urinary incontinence or
13 uterovaginal prolapse.
14